ABSTRACT

Two isoforms, p110 and p58 of PITSLRE protein kinase, can be translated from the same p110 (a2-2) mRNA by an internal ribosome entry process. Accordingly, p110 and p58, two proteins with punitive different functions, are translated from a single mRNA species by using two AUGs within the same reading frame. These two proteins share the 439 C-terminal amino acids that contain the kinase domain. The internal ribosomal entry site ("IRES") in the polycistronic p110 mRNA is the first IRES completely localized in the coding region of a cellular mRNA. Moreover, it was unexpectedly found that the IRES element is cell cycle regulated. Translation of p58 occurs in the G2/M stage of the cell cycle.

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